DUTCH MARINE OBSERVATIONS

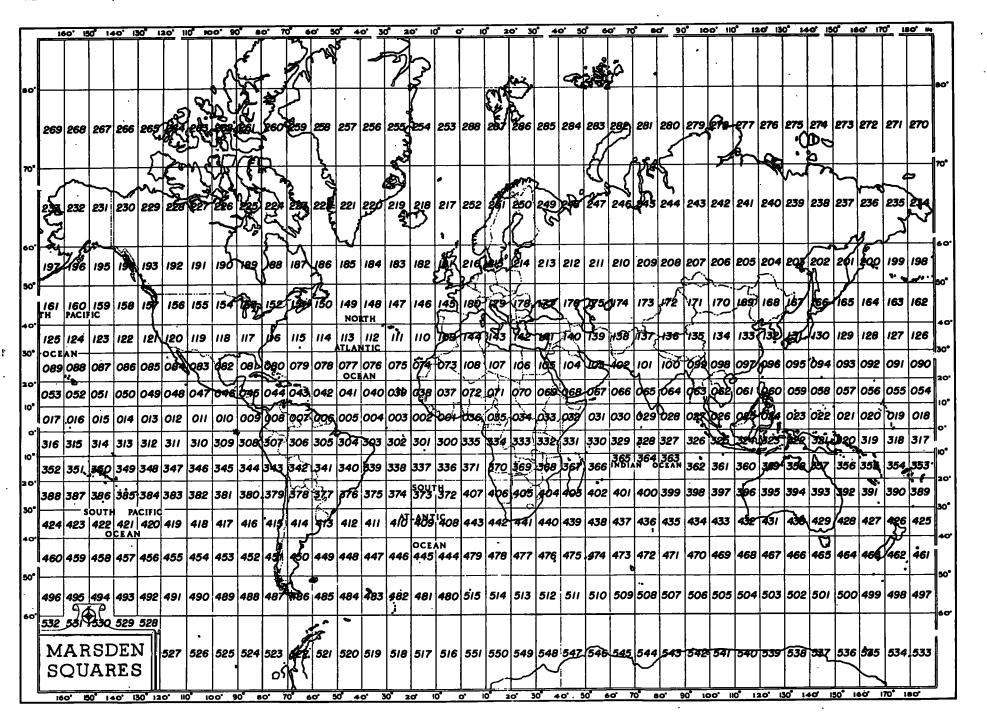
This reference manual was prepared for use with the observations from the Dutch Marine Deck. Reproduction for our usage was done at the Netherlands Meteorological Institude at DeBilt on IBM electroplate #Al1831. The cards were obtained as part of an expanding interest in marine climatology to supplement the German and British Marine Decks in the earlier years. Current make-over is being accomplished on a slightly revised card form, IBM electroplate #809691.

Card volume for this deck is as follows:	N. Atlantic and North Sea	2,352,000
	S. Atlantic Ocean	753,000
	Pacific Ocean	634,000
	Indian Ocean	1,872,000
	Red Sea	427,000
	Mediterranean and Black Seas	563,000
·	Total	6,601,000

Unusual features of the deck include observations of current (set and drift) and observations of duration of fog and precipitation.

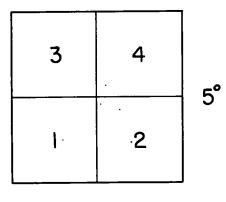
Meteorological elements observed include wind direction and force, sea level pressure, visibility, air and sea temperatures, high cloud type, cloud direction, total cloud amount, sea amount, swell direction and swell amount.

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ı	2	3	4	5	



SOUARES ARE ALWAYS ORIENTED
SO THAT THE LOWEST NUMBER IS
NEAREST THE INTERSECTION OF
THE GREENWICH MERIDIAN AND
THE EQUATOR.

			CARD	CONTENT		SOURCE CONTENT
Col - umns	item	Gode	Code Definition	Remarks	Units or Symbols	Reporting and Coding Practices
1-2	Day	01-31 Blank	Day of month			All times in this card deck are in ship's or local standard time.
3	lionti	1-9 0	January - September October			
Ì		<u>X</u>	November.		i	
}		2	December	,		
1-5	Year	Blank 54-38	('nknown 1854 to 1938			Some Y punches occur in column 4 but these are for Dutch use.
4-5	Teal	3lank	Unknown			Some I punches occur in column 4 out Mese are for Durch dee.
6-7	Current	00	No Current	1854 through 1930 only.	-	Direction toward which the current is moving.
	(Set)	02	North Northeast			
1		24	Northeast			
		06	East Northeast			
		10	East Southeast			
İ		12	Southeast	·		
		14	South Southeast			
1	1	16	South	·		1
1	•	18	South Southwest			<u>.</u>
1		20	Southwest	· i		
ł		22	West Southwest			
1	1	24	West Northwest	·		·
ŀ		28	Northwest			·
1	1	30	North Northwest			
	1	32	North	∵		
	1	99	No current	1931 through 1938 only.		
	ļ	Blank	Unknown			
8-9	Current (Drift)	00-98	0 to 98 nautical miles per day ≥ 99 nautical miles	ļ		
		"	per day	<u>-</u>		
	1	Blank	Unknown			
10	Number	. У	Indicator	Cards have barometric pressure, air temperature and sea water temperature punched.		
	·	X	Indicator	Cards do not have duration of fog or precipitation punched.		
11-12	2 Square	01-25	Indicator Ship located in 2°	For Dutch use only. All cords punched. See diagram showing 2° subdivisions of a Marsden		A Dutch variant of the Marsden square system whereby the 1° squares of a 10°
111-12	z Square	l	square designated Unknown	square		square are combined in groups of four so that 2° square 01 is composed of 1° squares 00. 01. 10. 11. etc.
13	5° Square		Ship located in 5° square designated	See diagram showing 5° subdivisions of a Marsden square.		The lowest numbered 5° square is generally the quarter of a 10° square nearest to the equator and the Greenwich Meridian. Y punches in column 13 are for Dutch
1/-26	10° Square		Unknown Ship located in 10	Con non charden muchowing used to dank make a service		use only. The Marsden system of assigning numbers to a "square" having dimensions of 10°
1,10	TO STUELS	3011-377	square designated	See map showing numbering used to designate a square having 10° of latitude and 10° of longitude.		of latitude and 10° of longitude begins at the Northwest corner of the inter-
1	1	Blank	Unknown	inerand to of to system out to of toliki sectes		section of the equator and the prime meridian, thus square 001 extends from the
17-18	Sub-Square	00-99	Ship located in 1	See diagram showing lo subdivision of a Marsden square.		equator to 10°N latitude and from Greenwich to 10°W longitude.
l	Sub-Square (1° Square)		square designated			The numbering continues in a circumpolar manner proceeding westward through square
1		Blank	Unknown			036. Square 037 is directly north of square 001 and the process is repeated for
						this latitude band. Squares in the southern hemisphere begin with square 300 which is directly south of square 001, and are numbered consecutively in a west-ward circumpolar manner by progesssively higher bands of 10° of latitude. One degree squares are numbered in tens position by the 1° of latitude and in the
	<u></u>					units position by the 1° of longitude within the 10° square.

			CARD	CONTENT		SOURCE CONTENT
Gol – umns	item	Code	Code Definition	Remarks	Units or Symbols	Reporting and Coding Practices
19	Fa tch	1 2 3	4:00 a.m. 8:00 a.m. Noon 4:00 p.m.	The hour at which the observation was made.		Code 6 is punched for midnight or 00 hours of the day beginning.
20	Blank	5 6 Blank	8:00 p.m. Kidnight Unknown Not used			
21-22		00 02 04 06	Calm North Northeast Northeast East Northeast	For the years 1854 through 1930.	,	
ļ		08 10 12 14 16	East East Southeast Southeast South Southeast South			
		18 20 22 24 26	South Southwest Southwest Vest Southwest West Vest Northwest			
		28 30 32 99	Northwest North Northwest North Calm	For the years 1931 through 1938.		· -
23-24	Wind Force	81unk 00 01 02	Unknown Calm Light airs Light breeze			According to Beaufort scale.
		03 04 05 06 07	Centle breeze Moderate breeze Fresh breeze Strong breeze High wind (moderate		:	·
		08 09 10	gale) Gale (fresh gale) Strong gale Whole gale			
25-26	Blank	11 12 Blank	Storm Hurricane Unknown not used			
27-29	Air Pressure		700.0 to 799.9 mm. Unknown	Tens, units, and tenths of millimeters omitting initial 7.		Corrected for temperature and reduced to mean sea level but not corrected for gravity.
30	Visibility	0 1 2 3 4	Dense fog Thick fog Fog Moderate fog Thin fog or mist	Visibility < 50 meters. Visibility 50 to 200 meters. Visibility 200 to 500 meters. Visibility 500 to 1000 meters (1/2 nautical mile). Visibility 1/2 to 1 nautical mile.		Visibility observation began in 1922.
		6 7	Visibility poor Visibility moderate Visibility good Visibility very good Visibility excellent	Visibility 1 to 2 nautical miles. Visibility 2 to 5 nautical miles. Visibility 5 to 10 nautical miles. Visibility 10 to 30 nautical miles. Visibility > 30 nautical miles.		· ·

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			GARD	CONTENT		SOURCE CONTENT
Col - umns	item	Code	Code Definition	Remarks	Units or Symbols	. Reporting and Coding Practices
	Visibility (Continued)	¥	Indicator	Fog patches have been observed during the watch (Y overpunched).		
		Blank	Unknown			
31 32-34	Blank	000-700	Not used 00.0 C to 49.9 C	Tens, units and tenths of degrees centigrade.		
32-34	Temperature	500-999	-00.0°C to -49.9°C	rens, units and tentals of degrees centagrape.		
35	Blank.		Not used			
	Sea Fater Temperature	500-999	00.0°C to 49.9°C -00.0°C to -49.9°C Unknown	Tens, units and tenths of degrees centigrade.	•	
	Indicator	X	Sea temperature greater			Relatively few observations of this nature are from the original Dutch source
]	Air-Sea		than air temperature			but have been computed from the two values given for most of the North Pacific.
	Temperature Difference	Blank		With columns 40-42 punched.		Relatively few observations of this nature are from the original Dutch source but have been computed from the two values given for most of the North Pacific. The rough area in which computations have been made are from 10° south latitude to 70° north latitude and from 100° West longitude through the 180th Meridian to
	Dillerence	Blank	than sea temperature Unknown	With columns 40-42 blank.	·	100° East longitude.
40-42	Air-Sea	000-999	00.0°C to 99.9°C	Absolute value of air temperature minus sea temperature		100 table foriginates
	Temperature Difference	Blank	Unknown	to tens, units, and tenths of degrees.		
43	Upper Cloud		Cirrus			
1	Type	2	Cirrostratus			· .
		3	Cirrocumulus			i
		4	Altocumulus Altostratus			· · · · · · · · · · · · · · · · · · ·
1	i i	Blank	Unknown	 		Cloud type left blank when cloud direction was missing.
44-45	Cloud	DIGIT.	·			Cloud type left thank when though three than was missing.
 	Direction	00	Calm	For the years 1854 through 1930.	l	Direction from which cloud is moving.
. []	02	North Northeast			1
1		04	Northeast			1
ļ ļ	ļ		East Northeast			1
	[East			· ·
			Fast Southeast Southeast			
			South Southeast	·		<u>{</u>
			South			
			South Southwest			<u> </u>
i '	1		Southwest		•	<u> </u>
			West Southwest			1
1			West		•	· .
]	ľ		Fest Northwest Northwest	· ·		
			North Northwest			
			North			[
			Calm	For the years 1931 through 1938.	•	1
l			Unknown			When unknown or not observed, the entire cloud field was generally left blank.
46	Cloud	0	No clouds	Clear sky		
i i	Amount		·1 of the sky covered			1
	İ		-2 of the sky covered			
}		3	· 3 of the sky covered			· ·
			.4 of the sky covered			
			6 of the sky covered	 		
))			.7 of the sky covered	j		1
i i		8	.8 of the sky covered]		
		9	.9 of the sky covered			1
		Y	Sky completely covered	Overcast	•	. 1
	i i	Blank	Unknown			

			CARD	CONTENT	SOURCE CONTENT						
Gol - umns	item	Gode	Code Definition	Remarks	Units or Symbols	Reporting and Coding Practices					
47 - 49	Blank		Not used			·					
	Sea	0	Calm	Height of wave, crest to trough 0 feet.	 	Observations of sea amount began in 1883. Sea amount is the equivalent of the 1929					
-	Amount	1	Smooth	Height of wave, crest to trough < 1 foot.]	Copenhagen International Code, symbol S, state of sea. The Dutch code is uniform					
		2	Slight	Height of wave, crest to trough 1-3 feet.	3	with the "Douglas" code. The Dutch interpretation of code figure 9, however.					
		3	Moderate	Height of wave, crest to trough 3-5 feet.		indicates a sea that is higher than codes 7 or 8. The code is progressive					
		4	kough	Height of wave, crest to trough 5-8 feet.		throughout and a confused but not extremely high sea (as, for instance, the sea					
		5	Very rough	Height of wave, crest to trough 8-12 feet.	4	in or near the center of a typhoon) is not coded as 9.					
		6	High	Height of wave, crest to trough 12-20 feet.	4						
			Very high Precipitous	Height of wave, crest to trough 20-40 feet. Height of wave, crest to trough > 40 feet.	 						
		9	Confused	See "Reporting and Coding Practices."	4						
		Blank	Unknown	Dee Melot will and odding 11ac (1ces."	+						
51-52	See 11	00	No swell or slight	For the years 1922 through 1930.	 	Direction from which swell comes. Observation of swell began in 1922.					
	Direction	1	swell the direction of	100 0110 40-10 17110 1110 1110 1110 1110 1110 1110		The second secon					
			which was not observed,								
			or confused swell	<u> </u>	1						
	ł	02	North Northeast		7						
	!	04	Northeast		İ						
		06	East Northeast		}	·					
	1	- 08	East	-							
	l	10	East Southeast Southeast	-	1						
	İ	12	South Southeast	-							
		16	South	-							
		18	South Southwest	7							
		20	Southwest								
		22	West Southwest		1	· ·					
		24	Fest								
	1	26	West Northwest			<u>.</u>					
-	1	28	Northwest		1	•					
		30	North Northwest			1					
		32	North Confused swell	4		•					
		99	No swell	For the years 1931 through 1938.	4	· ·					
			Unknown	For the years 1731 through 1730.	4	1					
53	Swell	Dieter	No swell or slight	And sea smooth to moderate.		International code of 1921 used prior to 1931.					
-	Amount	-	swell			Institutional code of 1/21 used pilot to 1//1					
		1	Moderate swell	-		· · ·					
		2	Heavy swell								
	•	3	Long low swell			·					
		4	Confused swell		j						
		5	No swell of slight	And sea rough.	ļ						
			swell	-							
		6 -	Moderate swell Heavy swell	4	1						
			Long low swell	-							
		 	Confused swell		ļ.	·					
		- 6 -	No swell		 	International code of 1929 subsequent to 1930.					
		i	Low swell	Short or average length.	1						
		2	Low swell	Long	1						
		3	Moderate swell	Short]	<u> </u>					
			Moderate swell	Average length]						
		5	Moderate swell	Long	1						
		6	Heavy swell	Short	↓ ;	1					
		7 8	Heavy swell Heavy swell	Average length Long	4						

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	•		CARD	CONTENT	SOURCE CONTENT							
Coi - umns	item	Gode	Code Definition	Remarks	Units or Symbols	Reporting and Coding Practices						
53	Swell Amount	9 Blank	Confused swell Unknown									
	(Continued)					<i>p</i>						
-55	Duration of Fog	01-16	1 to 16 quarters of an hour per watch	·		·						
56	_	Blank Y	No fog observed Indicator	Thundaretown observed during the watch (V oversumbled)		<u> </u>						
57		Ÿ	Indicator	Thunderstorm observed during the watch (Y overpunched). Hail observed during the watch (Y overpunched). Snow observed during the watch (X overpunched).								
		X	Indicator	Snow observed during the watch (X overpunched).		<u> </u>						
	Duration of Precipita-	01-16	1 to 16 quarters of an hour per watch			•						
	tion		No precipitation observed	<u></u>								
-80	Blank		Not used		-							
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